

Colorectal cancer screening in the Czech Republic

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The epidemiology of colorectal cancer (CRC) in the Czech Republic is extremely unfavorable. The Czech Republic has long placed first in international epidemiological statistics in terms of CRC incidence and mortality. An incidence of 79/100,000, and mortality 45/100,000, are indeed alarming figures, which have not virtually not changed in recent years, and are the consequence of a unfavorable genetic burden of our population. Regrettably, the figures also reflect the unfavorable environmental factors and dietary habits of the population of the Czech Republic. The situation in the neighboring countries (Germany, Slovakia, Austria, Hungary) is similar, and even in the geographically more distant nations of the European Union and North America, CRC is a leading health challenge. The issue of carcinogenesis of CRC is very well characterized and the methods allowing to detect CRC in the general population are well known, and – if using an adequate approach – to minimize the adverse impact of the disease on public health. It is just the secondary prevention programmes, which are the most important aspect of fighting the disease in industrialized nations. The Czech Republic has not lagged behind international trends and has been successful in developing a functioning system of secondary prevention, perceived as most effective by international authorities. Czech gastroenterology is held in high esteem for the way CRC prevention is presented to the general public via media campaigns but, also, for developing a consensus platform for medical specialties successful in defining, in clear-cut terms, the competence of individual entities providing therapeutic/preventive care. Likewise, the facts that colorectal cancer is one of the priorities of the Czech healthcare system and that there is a feedback between the executive bodies and the healthcare community are also viewed positively. This is evidenced by the programme of state subsidies (generous in the Central European context) allowing to establish, within a system traditionally short of funds, a network of

specialist centres available to anyone willing to accept simple rules of preventive anti-cancer care.

The World Health Organization (WHO) developed criteria for screening (i.e. for the identification of asymptomatic individuals) of diseases severely affecting public health (6). The final outcome is the decrease of mortality of the screened disease (disease – specific mortality). The outcome was met in two case-control studies (10,12) and subsequently in three prospective, randomised, controlled studies (7–9). This programme was implemented in Germany in 1977 as part of the free anticancer health check. In 1995, the programme was recommended by a panel of independent experts of the US – Preventive Services Task Force (11) and by the European Group for Colorectal Cancer Screening (2). In 2001, a panel of independent experts of the US Health Ministry analysed the current preventive programmes in the US depending on the degree of specific-disease for the national health status and the preventive programme efficacy. Based on these criteria, the US developed eight priority preventive programmes, with only CRC programmes as organ malignancy programmes included (1).

CRC screening in Czechoslovakia and, subsequently, in the Czech Republic, did not lag behind the other European nations. The large population studies clearly confirmed the efficacy of international studies in the Czech population and documented, even under conditions of a non-economical health study system, the efficacy of secondary prevention programmes. Two large multicentric CRC studies were conducted in 1985 – 1991 (4) and 1997 – 1998 (3), showing a high compliance of the Czech population (with more than 80 % of respondents performing the initial faecal occult bleeding test as instructed). The cost-efficacy analysis study performed in a segment of the Czech population aged 45 – 60 years showed that screening of asymptomatic individuals allowed an earlier diagnosis (individuals accepting screening

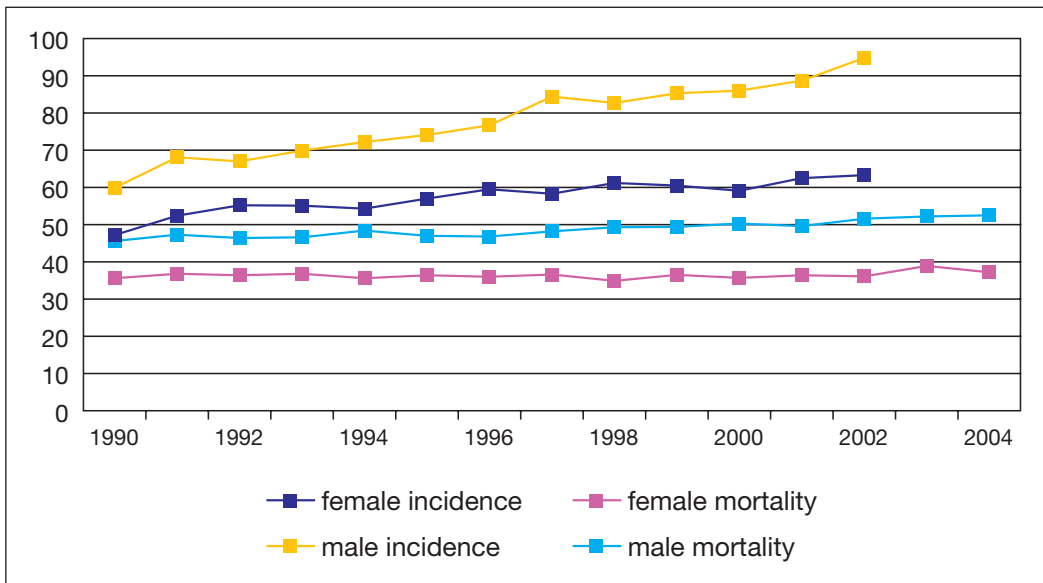


Figure
Incidence and mortality
of colorectal cancer in
the Czech Republic in
the period 1990–2004 (by
gender, per 100,000
population)

Table

The results of the screening programme of colorectal cancer in the Czech Republic over the 2001–2005 period

Year	Number of FOBTs performed per year	Number of positive FOBTs	Number of colonoscopies performed in FOBT positive subjects	Total number of CRC in FOBT positive persons	Total number of adenomas in FOBT positive persons
2001	139,575	7,002 (5.02 %)	4,393	252	1,926
2002	159,575	11,578 (7.26 %)	9,462	569	3,815
2005	236,098	15,635 (6.62 %)	14,885	951	4,682

FOBT – faecal occult blood test
CRC – colorectal cancer

had more than a third of operable intestine-limited tumours compared with symptomatic patients), does not increase the diagnostic and short-term costs and, conceivably, reduced the long-time costs given the lower numbers of advanced disease seen during screening. In addition, it was also found an asymptomatic individual aged 45 – 60 years, on average, with CRC found during screening, is capable of working for an average 21 months longer than a patient whose CRC was diagnosed in a symptomatic stage. Such a period was consistent, evaluated using the then gross national product values, an average saving of more than 315,000 Czechoslovak crowns (5). The Czech Society of Gastroenterology initiated the development for the screening, diagnosis, and treatment of the disease (13). In the early 2000, the faecal occult bleeding test (FOBT) was established as a standard for a preventive two-year examination with the general practitioner. Late 2001 saw the setting up of the Council of the CRC Screening in the Czech Republic, whose main tasks was to coordina-

te the collaboration of gastroenterologists and general practitioners at the regional level. Another task was to select cooperative gastroenterologists and mapping of the current availability of endoscopic technology. Regional programme coordinators in charge on programme implementation were selected. Based on a survey, the need for expanding the network and improved equipment of endoscopic centres was established. It was demonstrated the current network of endoscopic centres and their technical availability were unable to cover the increase in demand for colonoscopy procedures, induced by nationwide screening. This subsequently led to increased funding to expand the network of endoscopic centres within the Czech Republic. The screening logistics went hand in hand with continuous information and educational campaign intended for the population at risk. All major mass media (TV, radio, daily press) featured a number of interviews with experts; with TV and radio featuring popular science programmes addressing topics of anti-cancer pre-

vention, with a number of artists and politicians recruited. A campaign is ongoing using ads in the press; and information materials for patients in healthcare facilities are also available. The campaign supported by the know-how of the Vision 97 Foundation is also believed to be well prepared by international experts. The medical aspects and results of the screening programme are being presented to the medical public via a series of "ask the expert" seminars; the healthcare personnel is continuously being trained in the method of assessing FOBT kits. In 2003, the Ministry of Health of the Czech Republic set up the Committee for CRC Screening in the Czech Republic, with a clearly defined status and competence. The main task of the commission has been and is to monitor and control the course of the screening programme in the Czech Republic. The results of the screening programme over the 2001 – 2005 period are summarized in the table. It is clear the number of FOBT procedures, colonoscopy procedures, and the rate of detection of early tumours and adenomas have doubled. Problematic aspects of the screening programme continue to include inadequate involvement issue of general practitioners (with only 20 % of GPs fully adopting the programme) and, most impor-

tantly, continued appreciable inter-regional differences in the numbers of CRC diagnoses in the Czech Republic. When comparing the funds needed to equip endoscopic centres in individual regions and the numbers of CRC diagnosed, the price of a single "screening colonoscopy" will be 6,000 to 18,000 Czech crowns (CZK). These problems should just be handled by a more intense media campaign and a continuous analysis of results of the screening programme.

The Czech screening programme has earned considerable respect abroad. The results of our programme were presented by Professor Classen at the International Digestive Cancer Alliance congress held in Beijing, China, in December 2005. The results of the national programme were presented in full at the congress of this highly respected body held in Los Angeles in 2006.

By introducing its screening programme, Czech gastroenterology has made a major achievement in preventive medicine and rightly became an international leader in the field. A nationwide screening programme will furnish a large body of data whose analysis will help us to define an optimal strategy of prevention of this serious malignancy.

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